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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/877,312	06/08/2001	Christophe Serbutoviez	PHN 16, 199B	9784

24737 7590 06/16/2003

PHILIPS INTELLECTUAL PROPERTY & STANDARDS
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EXAMINER

HON, SOW FUN

ART UNIT PAPER NUMBER

1772

DATE MAILED: 06/16/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/877,312

Applicant(s)

SERBUTOVIEZ ET AL.

Examiner

Sow-Fun Hon

Art Unit

1772

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) 1-4 is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 5-9 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☒ Certified copies of the priority documents have been received in Application No. 09/013,546.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). ____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____ 6) ☐ Other:

DETAILED ACTION

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:

I. Claims 1-4, drawn to a process, classified in class 438, subclass 30.

II. Claims 5-9, drawn to a product, classified in class 428, subclass 1.1.

2. The inventions are distinct, each from the other because of the following reasons:

Inventions I and II are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case the reactive monomers and photoinitiator are radiation pre-polymerized first before being added to the liquid crystalline material in a solvent.

3. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

4. During a telephone conversation with Aaron Waxler on June 3, 2003, a provisional election was made without traverse to prosecute the invention of Group II, claims 5-9.

Affirmation of this election must be made by applicant in replying to this Office action. Claims 1-4 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

5. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the

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currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Claim Rejections - 35 USC § 103

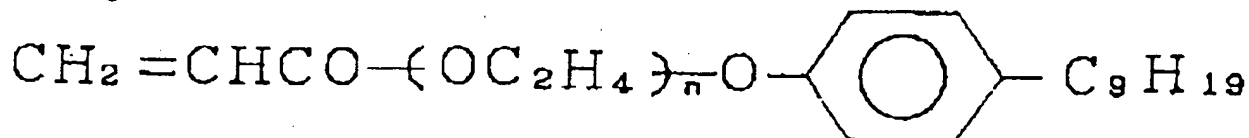
6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 5, 8-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Masayuki (English Online Translation of JP 05019240).

Masayuki has a liquid crystal display which comprises a polymer-dispersed liquid crystal (PDLC) cell. The amount of liquid crystal is 75 % by weight along with a small amount of photoinitiator (photopolymerization initiator) (sections [0015] to [0016]).

The acrylate monomer with the formula below is taught to be poorly miscible (weak interaction) with the liquid crystal and mixed (used together) with the acrylate (acrylic ester) oligomer taught to be miscible (of good compatibility) with the liquid crystal (sections [0013] to [0014]). An oligomer is a coupling of several identical monomers and thus qualifies as a homolog of the monomer.



(n = 3 ~ 9)

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Masayuki teaches that the liquid crystal display device comprises a polymer-dispersed liquid crystal cell with a TFT or MIM element (section [0021]) which means that there is a matrix of individually drivable rows and columns of electrodes which is required for the individual pixels of the display as well as means for driving these electrodes.

Even though product by process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process. *In re Thorpe*, 227 USPQ 964, 966 (Fed. Cir. 1985). In the instant case, the end product which is the display device does not depend on the method of production in the absence of a showing of unexpected results due to the method.

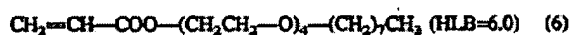
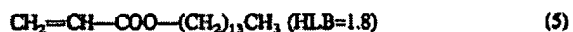
8. Claims 6-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Masayuki in view of Takiguchi et al. (US 5,496,497).

Masayuki teaches a liquid crystal cell comprising a mixture of one acrylate miscible with the liquid crystal and one acrylate poorly miscible with the liquid crystal. Yazaki fails to teach the specific combination of the miscible acrylate as an ethoxylated alky-phenolacrylate whose alkyl group comprises at least five C-atoms and the poorly miscible acrylate as an alkylacrylate whose alkyl group comprises at least 8 and maximally 18 C-atoms.

Takiguchi et al. has a polymer-dispersed liquid crystal composition for a liquid crystal cell in a liquid crystal display device (abstract) and comprises a mixture of two acrylate monomers. The mixture of acrylate monomers (5) and (6) below is given as an example, where

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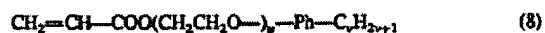
each acrylate is present in the amount of at least 20 % (ratio by weight of 1:1 means 50%: 50 %)(column 6, lines 1-60):



The HLB of the first monomer (5) is 1.8 and the HLB of the second monomer (6) is 6.0. This means that the first monomer (5) is alot more lipophilic than the second monomer (6), the difference in HLB defining one monomer being miscible or compatible with the liquid crystal and the other monomer being poorly miscible or incompatible with the liquid crystal, depending upon whether the liquid crystal is hydrophilic or lipophilic. The acrylate monomer (6) is a specific member of the family of acrylate monomers of formula (7) below. The ethoxylated alkyl-phenolacrylate family of acrylate monomers of formula (8) is listed as being a suitable one like (7) since they are easily obtained and have low volatility (low vapor pressure). The alkyl group of the ethoxylated alkyl-phenolacrylate comprises at least five C-atoms since v is from 4 to 18.



wherein p is an integer of 0 to 6; and q is an integer of 8 to 18 when p=0, q is an integer of 6 to 18 when p=1, and q is an integer of 1 to 18, preferably 4 to 18 when p is an integer in the range from 2 to 6.



wherein u is an integer of 0 to 6; and v is an integer of 4 to 18.

The HLB of a specific ethoxylated alkyl-phenolacrylate M4 is 5.2 (columns 15-16, lines 1-30) which is 0.8 HLB units less than monomer (6), but still alot less lipophilic than monomer (5).

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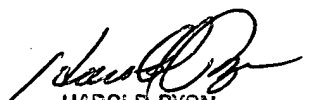
Since Takiguchi et al. teaches that the specific mixture of monofunctional acrylate monomers is used in order to better control the characteristics of the obtained liquid crystal/prepolymer composition (column 5, lines 65-70 and column 6, lines 1-15), it would have been obvious to one of ordinary skill in the art to have used the alkylacrylate and ethoxylated alkyl-phenolacrylate of Takiguchi et al. in the mixture of acrylates in the invention of Masayuki in order to obtain a liquid crystal/prepolymer composition with the desired characteristics for the desired liquid crystal cell performance.

Any inquiry concerning this communication should be directed to Sow-Fun Hon whose telephone number is (703)308-3265. The examiner can normally be reached Monday to Friday from 9:00 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Harold Pyon, can be reached on (703)308-4251. The fax phone number for the organization where this application or proceeding is assigned is (703)872-9310.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-0661.

SH
Sow-Fun Hon
06/11/03


HAROLD PYON
SUPERVISORY PATENT EXAMINER
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6/12/03